

# PATENT COOPERATION TREATY

TRANSLATION

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**5090-PCT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2005/001027**

International filing date (day/month/year)

**20.01.2005**

Priority date (day/month/year)

**21.01.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**KYOTO UNIVERSITY**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

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International application No.

PCT/JP2005/001027

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
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PCT/JP2005/001027

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5, 10-11	YES
	Claims	1-4, 6-9	NO
Inventive step (IS)	Claims	10-11	YES
	Claims	1-9	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP, 2003-282884, A (Kansai TLO Kabushiki Kaisha), 03 October, 2003 (03.10.03)  
Document 2: JP, 2-291696, A (Ricoh Co., Ltd.), 03 December, 1990 (03.12.90)

The subject matters of claims 1-4 and 6-9 do not appear to be novel or to involve an inventive step according to document 1 cited in the ISR.

In document 1, figure 3 (especially, reference paragraphs 0011-0026 and each of the drawings), an organic EL element having hole-infusing electrode 35, electron-infusing electrode 36, organic EL luminous layer 34, insulating membrane 33, and control electrode 32 with both sides having different polarities are described. In figure 4 of the same document, an organic EL element having hole-infusing electrode 46, electron-infusing electrode 47, hole-transport layer 45 (recognized as "P-type organic semiconductor layer"), and electron transport layer 44 (recognized as "N-type organic semiconductor layer") are described. Furthermore, when referring to the description of paragraph 0013 of the same document, each of the control electrodes 32 with both sides having different polarities as described in the document are recognized as controlling each infusion of holes and electrons.

The subject matter of claim 5 does not appear to involve an inventive step according to documents 1 and 2 cited in the ISR.

In document 2, in an electric field luminous element, building a mixed organic layer of hole transport material and electron transport layer is described. Therefore, in the invention described in document 1, building a mixed layer of materials that are used in hole transport layer 45 and electron transport layer 44 is easy for a person skilled in the art.

The subject matters of claims 10-11 are not described in any of the documents cited in the ISR and are not obvious to a person skilled in the art.